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COLONY OF MAURITIUS

ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR 1917

No. 1226.

THE HONOURABLE THE COLONIAL SECRETARY,

I have the honour to submit the Annual Report on Agricultural conditions and on the Department of Agriculture in Mauritius for the year ended December 31st 1917.

SECTION I

AGRICULTURAL CONDITIONS IN 1917

2. From the Agricultural point of view the year can only be regarded as moderately favourable; the weather experienced was not all that could be desired for the development of crops; conditions in this respect during the growing season are summarised below:

Climate

Month	*Temperature*	*Rainfall*	*Amount of Sunshine*
November 1916	Below normal in mean for month.	Much below normal in all districts.	Above normal.
December ,,	1° C below mean for month.	Much below normal in all districts.	Below normal for month.
January 1917	Variable and generally below normal.	Below normal in lower regions, above normal in more elevated districts.	Somewhat above normal for month.
February ,,	Below normal for the month.	Generally deficient.	Above normal.
March ,,	Below normal for the month.	Somewhat deficient, but fairly well distributed.	Below normal.
April ,,	Generally below normal.	Above average. Heavy during the middle of the month.	Somewhat above normal for the month.
May ,,	Above for first half of month, and below normal for other portion.	Markedly below average.	Above average for the month.
June ,,	Variable during month, slightly above normal in the mean.	Moderately heavy rain fell towards the end of June, but total rainfall was generally below normal for the month.	Above average for the month.
July ,,	Temperature above normal for the greater part of the month.	Rainfall on the average slightly below normal.	Below the average for the month.
August ,,	Generally below normal for the month.	Decidedly above normal in most districts of the island.	Below average.
September ,,	Generally below normal for the month.	Markedly below normal everywhere.	Slightly below average.
October ,,	Generally below normal.	Very markedly above average. Heavy rain experienced in all districts.	Much below average.
November ,,	Markedly below average for November.	Very considerably above average in all districts.	Normal amount experienced.
December ,,	1° C below normal for month.	Deficient all over the island.	Above normal for the month.

The result was that the cane crop while satisfactory in some districts was distinctly below the average in others. In general it may be said that in Moka, save in the Moka–Flacq side, and in Plaines Wilhems and the upper part of Flacq decidedly satisfactory yields were obtained, in Grand Port the yields were only moderately satisfactory, in Savanne they were below the average, and in the drier section of Pamplemousses and the lower parts of Flacq decidedly poor. In Black River the development of the " La Ferme " irrigational system has had for result the production of very satisfactory yields where water has been available.

Sugar Industry

3. The total production of sugar for the Colony for the crop of 1917 is estimated to be approximately 225,000 tons. Of this approximately 90 o/o is vesou, 5 o/o syrups, and 5 o/o low syrups. This is the highest proportion of vesou sugar that has been produced in the history of the Colony ; the following figures give the percentage of vesou on the total crop in the past seven years. The steady rise in the proportion of vesou is an indication of the improvement in methods of manufacture which has taken place during that time.

PROPORTION OF VESOU TO TOTAL CROPS

Year	*Total Crop metric tons*	*Vesou metric tons*	*Percentage Vesou to total crop*
1911	169,550	125,128	73.80
1912	213,059	167,124	78.40
1913	249,705	199,922	80.06
1914	277,360	227,463	82.01
1915	214,518	177,208	82.60
1916	209,035	166,725	80.23
1917	225,466	202,596	89.85

4. The general character of the various grades of sugar produced was on the whole satisfactory, though perhaps the quality was slightly lower than on previous occasions, a defect which is probably, at any rate in part, to be attributed to difficulties in procuring supplies of clarifying reagents owing to war conditions. Arrangements were concluded in July with the Imperial Commission for sugar supplies for the whole of the vesou crops to be sold for exportation to Europe on a basis of 17/– per cwt. for first grade sugar. Subsequently the arrangement was modified to allow a portion of the vesou to be sold to India, together with the whole of the first syrup sugar, sanction for the procedure having been accorded by the Government, in order to meet to some extent demands for Mauritius produce on the Indian market, and to adjust the balance of exchange between the Colony and India, consequent on the supply of Indian rice for local consumption which is not, as under pre-war conditions, offset by exportation of Colonial Sugar to India.

5. The quality of the canes handled during the crop has on the whole been satisfactory. According to returns taken from the Control Mutuel sheets, as a mean for 31 estates, the average composition of the cane handled in the factories has been as follows :—

Sucrose ... ... 13.40 o/o | Fibre ... ... 12.31 o/o

6. The total area under cultivation in cane at the commencement of 1917 was 167,560 arpents, being 4,151 arpents more than at the commencement of the preceding year. Of this total, 91,709 arpents were cultivated by estates and 75,751 by planters. The total area under cultivation by Indian proprietors or lessees amounted to 72,338 arpents or 43.2 o/o of the total area, this represents a further increase of 7,191 acres over the area cultivated by Indians in the preceding year.

The area cultivated by Indians continues to increase ; the high prices obtained for sugar during the past few years have encouraged land speculation, notably in the Plaines Wilhems and Pamplemousses areas, the effects of which may become unfavourably felt when seasons of more normal prices once more supervene.

7. Considerable interest has been shown during the year in the question of new varieties of cane for cultivation, owing to somewhat wide-spread anxiety that in certain localities many of the standard varieties of cane at present cultivated are showing signs of deterioration.

There is good reason to believe that the observed occurrences may be largely attributable to the spread of root-disease as the result of too intensive and, in some cases, defective methods of cultivation. Investigation shows that the disease is present in every district of the island, its intensity varying in different parts. It would appear to have gained ground considerably of recent years. While the control of the disease prevents no insuperable difficulties provided adequate methods are adopted, there is no doubt that at the present time it constitutes an important limiting factor to production, due account of which requires to be taken in the determination of the agricultural policy of cane growers.

8. The question of the control of insects pests of sugar cane has continued to excite a good deal of interest and activity. In the Pamplemousses area the campaign against Phytalus Smithi has been continued on accustomed lines, and there appear to be evidences that the extraordinary efforts made during the past seven years are bearing fruit in the shape of a reduction of the incidence of the pest at certain points. In this connection, interest centres in the parasitic enemy of Phytalus Smithi, Tiphia parallela, the successful introduction of which from Barbados, and its establishment in the infected area constitute a remarkable piece of work which may be productive of highly important results.

9. Attention has become increasingly directed to the depredation of another insect pest of sugar cane, namely : the larva of the Gros Moutouc, " Oryctes tarandus, " which is sporadically present in cane areas throughout the island and has been responsible for not inconsiderable damage, notably in parts of Moka and Savanne. Investigation showed that related insects were known to be

parasitized by a wasp, " Scolia oryctophaga," in Madagascar, and on the invitation of the Chamber of Agriculture steps were taken to introduce this insect into Mauritius as a possible parasite of Oryctes tarandus. With this object the Entomologist was sent on a special mission to Madagascar in May 1917 and as a result succeeded in successfully introducing the insect in question and demonstrating its parasitism of Oryctes tarandus. Efforts to establish Scolia oryctophaga in Mauritius are still in progress, and if they are successful it is hoped that they may prove a definite palliative for the depredations of the Gros Moutouc.

10. The rise in the cost of living and material and the extension of cane cultivation among the Indian members of the community, have combined to increase the cost of production of both sugar in the factory and cane in the field to an appreciable degree.

It is estimated by the Statistician of the Department of Agriculture that owing to these causes the cost of production of sugar has increased since the commencement of the war by as much as 58 %. Coupled with this there has been experienced an ever increasing difficulty on the part of estates in obtaining labour necessary for cultivation.

11. In such circumstances it is obvious that attention should be directed to the possibility of economising labour in the field by the introduction of labour saving implements.

On a few estates the employment of ploughs and certain forms of cultivators has been continued during the year, but in spite of the circumstances alluded to in the previous paragraph there has been no appreciable expansion of their employment though, it is true, this may be partly owing to war conditions. In many parts of Mauritius the great prevalence of stones renders difficult the employment of implements, on the other hand there are large areas of " terre franche " in many districts which are admirably adapted to implemental cultivation, where little or no effort is being made to improve cultural methods and to reduce labour by the employment of labour saving devices.

The high prices for sugar have already become considerably offset by rise in the cost of production, while the end of the war will no doubt witness a considerable decrease in the market value of sugar ; the welfare of the sugar industry in the immediate future therefore demands that close attention should be directed in due time to the introduction of methods tending to greater economy in production both in the field and in the factory.

12. During the year 52 factories operated. Two factories which had worked during the previous crop were dismantled, the lands belonging to the estates being sold to a number of large and small growers while the canes produced on these lands were taken by neighbouring factories. Owing to war conditions it has only been possible to introduce minor addition to plant and machinery. Six new boilers, 2 economisers, 5 crushers, 6 filter presses, 46 Weston centrifugals, 51 home-mdae malaxeurs, 12 pressure juice heaters, and 7 dynamos had been installed by the commencement of 1917. Considerable attention has been devoted to the question of installing Messchaert Grooves on mill rolls. Hitherto opinion has been somewhat divided as to the advantage to be derived from the installation of this feature, but during the year under review it has become largely acknowledged that installation on the back rolls tends to effect an improvement in extraction, and a considerable number of usines have introduced grooves in this way.

13. The average extraction of all factories for the crop is estimated to be 10.51.

The extraction of factories contributing to the control mutuel for the last and four preceding years are given below :

	%	*Highest recorded*	*Lowest recorded*	*Mean*	*No. of Factories*
	—	—	—	—	—
1913 ...	Sugar—Canes ...	12.24 ...	10.20 ...	10.98 ...	25
„ ...	„ —in juice ...	89.60 ...	84.60 ...	87.6 ...	„
1914 ...	„ —Canes ...	12.15 ...	9.83 ...	10.76 ...	34
„ ...	„ —in juice ...	90.2 ...	83.1 ...	87.3 ...	„
1915 ...	„ —Canes ...	11.72 ...	10.07 ...	10.83 ...	28
„ ...	„ —in juice ...	89.1 ...	81.6 ...	86.5 ...	„
1916 ...	„ —Canes ...	11.16 ...	9.59 ...	10.30 ...	26
„ ...	„ —in juice ...	90.6 ...	83.1 ...	86.88 ...	„
1917 ...	„ —Canes ...	11.54 ...	9.82 ...	10.62 ...	31
„ ...	„ —in juice ...	89.52 ...	81.22 ...	86.37 ...	„

14. The conditions obtaining during the reaping season were on the whole fairly favourable, and in consequence practically every factory had concluded its grinding season before the 31st of December. Increasing difficulties were experienced by factories in obtaining supplies of certain clarifying materials for the manufacture of white sugar, such as phospho gelose, albuslite and similar preparations.

15. Difficulties were experienced in the transport of canes on the Government Railway owing to the practical impossibility of obtaining necessary material for the maintenance and the renewal of engines, rolling stock, and permanent way. About 10 per cent. of the cane crop is transported from the field to the factory by the Government Railways while a very great percentage of the sugar output is brought from factories to Port Louis for shipment by means of it ; the railway must be therefore regarded as an essential adjunct of the cane industry as at present constituted. The facilities offered by the railway have led in many cases to its employment for cane traffic over very large distances, in which the gradients are in some instances great, thereby occasioning excessive wear and tear on railway material. In consequence the question of effecting economies in transport in order to enable the railway to continue operations while the present difficulties continue had become a matter of urgency by the end of the year.

16. Chemical control in factories has continued to gain ground and the majority of factories at present working employ one or more chemists, although a few still operate without detailed chemical

control. In popularising improved methods of control the *Société des Chimistes* has continued to do good work, while the Government provision for the Registration of Agricultural Chemists is further materially assisting this end.

17. The total crop for 1917 for the different districts of the island is estimated as follows :—

Districts	*Estimated Crop*
	Tons
Pamplemousses	24,273
Rivière du Rempart	25,015
Flacq	39,694
Moka	31,740
Plaines Wilhems	17,880
Black River	6,450
Savanne	38,334
Grand Port	42,080
Total ...	225,466

18. During the year increasing difficulties have been experienced in procuring supplies of artificial manures for canes, potash salts have been unobtainable, while other manures have only been procurable at prices very greatly transcending any previously experienced.

The experience of planters in the past has led to the formation of the opinion that in the more elevated cane growing districts of the island supplies of artificial manures especially sulphate of Ammonia are essential to the development of the crop. It is however to be borne in mind that there is an economic limit to the profitable nature of such applications, and that with an increasing price for the material in question amounting to between 2 and 3 times its normal value, a point may occur when the cost of the manurial application exceeds the value of the resulting increase in yield.

In such circumstance it is of the utmost importance to ascertain exactly what is the economic ratio between the cost of application and the value of the resulting increase in yield and to be guided accordingly.

19. The year under review has witnessed the considerable extension of the irrigation scheme for the Black River district of the Colony comprising the "La Ferme" reservoir and distributing system connected therewith. The inauguration of the scheme has resulted in the placing under cultivation of 1,400 acres of land not previously worked ; water was for the first time supplied to estates from the reservoir on June 27th 1916 in which year about 300 acres of new land were irrigated. During the year under review a further area of 1,100 acres came under cultivation as the result of the scheme. Practically the whole area is under cane cultivation. The mean yield per acre in the irrigated area for the year under review is estimated to be 22 tons of cane, and the total yield of cane is therefore in round figures 50,000 tons. This, at 10.6 % extraction, the mean figures for the crop, represents 5,300 tons of sugar which must be regarded as the present addition to the crop of the island as the result of operation of the undertaking. At the present rate of progress it is estimated that the work will be fully completed in about 2 years from the present time, that it will provide water sufficient for an area of 4—5,000 acres. The supply of water proved adequate for existing requirements throughout the year.

20. By the end of the year of 1917, 121,585,440 tons of sugar had been shipped from the Colony.

Actual prices realized have ranged between 16/4—17/- per cwt. f.o.b. Mauritius for vesou shipped to Europe. Exact figures for sugar shipped to India are not yet available, but the indications are that they may prove somewhat below expectation.

21. Prices for canes continued to rule high owing to competition among factories for planters' cane. Actual values ranged between Rs. 15—17 per ton of canes when payment was made in cash and between 64—70% of the extraction when payment was made in sugar.

22. While the condition of the sugar industry must on the whole be regarded as prosperous during the year under review, there is no doubt that the rise in the cost of production has very appreciably reduced the profits of the industry.

The return of peace conditions may be expected to result in a reduction of prices, while it seems not improbable that further difficulties in obtaining a suitable outlet for produce may be experienced owing to the fact that during the war the output of Mauritius sugar has been largely diverted from the natural market, India. In consequence it is of considerable importance that attention should be directed to effecting economies in production whenever possible both in factory and in the field, so that the industry may be enabled to face efficiently the increased stringency of conditions of which there appears to be prospect in the not too remote future.

Subsidiary Industries.

23. *Fibre.*—High prices have continued to prevail for Mauritius fibre during the year, but the output has been very greatly restricted owing to the fact that prevailing conditions have rendered very difficult the shipment of produce. The total weight of fibre shipped during 1917 was 1,213,736 kilos the destination and the approximate values of the various shipments being as follows :—

To United Kingdom ...	... 715,970 kilos	valued at	Rs. 250,437.00
Natal	... 408,442 „	„	129,931.00
France	... 89,324 „	„	31,263.00

No work was done with the Corona Fibre Machinery, imported by the Government in 1915, during the year, but negotiations were undertaken with a view to its possible inauguration as a commercial undertaking ; at the time of writing, these negotiations are still in progress.

24. *Vanilla.*—Owing to war conditions and the practical impossibility of obtaining freight for produce, the vanilla industry has been practically stagnant throughout the year.

25. *Tea.*—The cultivation of tea for local consumption has been continued throughout the year. The industry though a small one is in a fairly satisfactory condition ; the rise in the cost of labour has however during the year caused some difficulties which are not yet fully met by adjustment of market values, the latter being dependent on the prices of imported teas from India, Ceylon and China.

26. *Cocoanuts.*—Young cocoanuts plantations on the Pas Géométriques have continued to make fair progress, and afford ground for believing that there is a reasonable prospect for success attending such ventures in suitable situations. There has however been no noticeable tendency towards an extension of existing cultivation.

27. *Tobacco.*—Small areas of tobacco have continued to be cultivated by growers especially in Flacq, and also in Rodrigues. Experiments have been continued by the Agricultural Department on the cultivation of Réunion tobacco and the results so far as they go indicate that it is perfectly feasible to produce locally the type of tobacco at present imported in large quantities from Réunion. A summarised account of these experiments is given in a later section of the report. If tobacco cultivation is to be attempted on any scale in Mauritius in the future it is probable that some revision may be required in the system of imposts on production which is at present current.

28. *Cacao.*—Small areas of cacao exist in certain parts of Mauritius notably in Grand Port. The trees are for the most part neglected, but yield a small annual crop which is consumed locally. The conditions of these plantations indicate quite clearly that in favourable situations the cultivation of cacao is capable of being successfully undertaken. Whether the area of suitable land available for cultivation is sufficiently large to enable an export trade to be built up may be doubtful, but it is clear that the cultivation of cacao on a limited scale with a view to local consumption holds out good promise of commercial success.

29. *Limes.*—In suitable situations lime trees do well in Mauritius, and at the November meeting of the Board of Agriculture His Excellency the Governor directed attention to possibilities of development in this direction. With a view to providing a demonstration of the possibilities of the crop, arrangements have been made for the establishment of a Government Demonstration Area on Crown land in the Southern part of Flacq.

30. *Pistache.*—There has been no increase in the area under this crop owing to the high prices for sugar.It is to be regretted that more attention is not devoted thereto as it provides a very good rotation with cane and is capable of yielding satisfactory profits. In this connection it is of interest to record that the Albert Oil Mills which are normally concerned with the handling of this crop, have during the latter part of the year dealt with a portion of the copra crop of the Oil Islands ; this product is normally exported to Europe, but owing to war conditions it has been impossible to ship the produce during the past season. The existence of this concern and the consequent possibility of finding a market for the produce of the minor dependencies of the Colony must be regarded as a fortunate circumstance.

Food Crops

31. In common with other parts of the world the necessity for the increased production of food crops has attracted considerable attention throughout the year. Mauritius, even more than other Colonies occupying a similar economic situation, is dependent on outside sources for her food supply. Nine-tenths of her vegetable food and much of her meat supply come from other countries, and the increasing scarcity of freight combined with the growing cost of all imported foods continues to render her position peculiarly precarious.

32. Considerable official attention has been directed to propaganda with a view to awaking popular opinion to the seriousness of the position while active efforts have been made in other directions to bring about directly an increase in the area under cultivation in food crops and greater economy of existing food supplies.

In his address to the Legislative Council in May 1917, His Excellency the Governor emphasised the seriousness of the position and called upon all to take steps to bring about the planting of a larger area in provision crops. Subsequently a special appeal was issued by His Excellency to land owners of all classes to cultivate some portion of the areas under their control in food stuffs ; the appeal was translated into French and Hindi and widely distributed throughout the Colony.

33. A series of meetings of the smaller cultivators was organised in the months of August and September by the Department of Agriculture ; at all of these the appeal of the Governor was read, the situation explained and discussed, and advice and assistance proffered. Large quantities of planting material of food crops have been since distributed to small growers by the Department.

34. A comprehensive scheme of short time leases of available Crown lands to small cultivators on easy terms for the cultivation of food crops was put into operation during the latter part of the year, by the Department of Agriculture in cooperation with the Forest Department, partly in the form of direct settlements, and partly through the medium of Cooperative Credit Societies. In all some 500 acres of Crown land have been allocated in this way. A detailed account of these efforts form an annexure to this report. A scheme of special advances to Cooperative Credit Societies for the purpose of cultivating food crops was also approved during the latter part of the year.

35. The erection of the Government Maize Sécherie at Mahebourg was completed during the year and in December operations of kiln drying corn for estates had been commenced. The equipment of the Sécherie comprises plant for shelling, kiln drying and storing of maize together with a meal making machine. An account of the undertaking forms an annexure to this report. In addition a meal making machine driven by horse gear has been imported for use by Cooperative Credit Societies, while a number of hand power meal grinding machines were imported by the Poor Law and Immigration Department and installed in the market at Port Louis for use by the public at a small charge. Grinding machines for making maize meal have also been imported by private firms, while

four machines driven by power for the purpose of crushing corn on the cob have been introduced and are being worked by sugar estates.

36. The intervention of the Imperial Government in assisting by the provision of freight the continued importation of rice from India has prevented any actual shortage of food up to the present, but the increasing difficulty in obtaining freight combined with the ever increasing prices for imported food stuffs renders the increased production of food crops a matter of paramount importance in Mauritius.

37. It is satisfactory to be able to record that as the results of the efforts made a very appreciable increase in the area cultivated in provision crops has taken place. It is estimated that at the end of the year 15,675 arpents were under cultivation in food stuffs representing an augmentation of 66.7 % on that previously cultivated, while further additions to this area were in immediate prospect. The situation however continues to be such as to render further extension of area highly essential.

Stock

38. The interference with the import trade of cattle from Madagascar owing to the temporary cessation of the voyages of the Government Steamer *Secunder,* seriously threatened the meat supply of the Colony in the latter part of the year.

In order to economise consumption, restriction in the sale of meat has been introduced by the Government, while the advisability of restricting the slaughter of cows and calves received consideration by the Department of Agriculture and the Board of Agriculture ; at the end of the year an Ordinance empowering the Director of Agriculture to make regulations for the purpose of restricting such slaughter was passed by the Legislature.

39. The outbreak of Foot-and-Mouth disease which occurred in the end of 1916 continued during the early part of the year, but as the result of restrictive measures adopted, was finally stamped out, in April 1917, all quarantines being removed early in May.

40. Cases of Surra were also recorded in the early months of the year and in December. The use of Soamin has however attained wide-spread application and is well recognised as an effective prophylactic against the disease.

41. Increased attention has been devoted to the installation of dipping tanks on estates and their regular employment for the dipping of cattle has extended. Further tanks have been erected during the year and there are now in all 14 tanks in existence in the Colony. There are good grounds for believing that regular dipping is likely to exercise a beneficial effect on the incidence of Surra as well as in cases of Tick-born diseases such as Piroplasmosis. In relation to the latter disease, it has become increasingly clear during the year that there has been appreciable mortality as the result of its incidence. In many cases a tendency exists to confuse it with Surra from which however it is quite distinct and demands a different form of treatment.

42. In view of the benefits likely to arise from the universal adoption of the practice of dipping cattle, it is worthy of consideration whether it might not be advisable to enforce by legislation compulsory dipping throughout the Colony as is done in South Africa and in other parts of the world.

Registration of Agricultural Chemists

43. A preliminary examination was held in the month of July under the Ordinance regulating the Registration of Agricultural Chemists. Three candidates presented themselves and all passed. The original ordinance was repealed during the year and an amended ordinance passed by the legislation to regulate matter in this connection, owing to certain difficulties which had arisen in connection with the working of the original Ordinance.

SECTION II

WORK OF THE DEPARTMENT OF AGRICULTURE

Staff Changes

Dr. H. A. Tempany, who had been selected to replace Mr. F. A. Stockdale as Director of Agriculture, arrived in the Colony on May 24th, and assumed charge of the Department. Mr. G. G. Auchinleck, Assistant Director of Agriculture, acted as Director of Agriculture until May 23rd.

Mr. F. Birkinshaw, Agricultural Instructor, left the Colony on the 6th of February for military service in England ; Mr. J. W. Shand Harvey was appointed to act as Agricultural Instructor from that date.

Mr. C. A. O'Connor, Chief Overseer, left the Colony for military service in England on April 28th, and Mr. L. d'Unienville was then appointed to act as Chief Overseer.

Mr. d'Unienville resigned his acting appointment on November 30th and Mr. F. Berbeyer was appointed to replace him from that date.

Mr. C. d'Avoine was appointed to the post of Scientific Assistant in the Chemical division on July 1st.

Mr. S. Gébert was appointed Scientific Assistant in the Biological division from August 10th.

Mr. M. Maya was appointed as Junior Overseer, Réduit, on July 1st, from August 1st he was seconded for special duty as Overseer of Food plantations.

Owing to the increase of clerical work the appointment of an additional sixth class clerk was approved during the year and on December 1st Mr. Y. Lefébure, Writer in the Department, was appointed to the new post.

Mr. A. Delord, Officer-in-charge of beetle destruction, was selected for duty as Officer-in-charge of the Maize Sécherie as and from October 1st. He was replaced by Mr. E. Rohan.

The Entomologist was absent from Mauritius between the dates 28th May and 27th August in connection with his official mission to Madagascar in search of parasites of Oryctes tarandus.

In spite of these numerous staff changes during the year it has been possible to maintain the activities of the Department along previously established lines, while a number of new branches of work have been established.

The work of the Chemical division was largely occupied with routine matters during the year.

Owing to staff changes the division of Entomology and Phytopathology have been combined into one division of Biology. Considerable attention has been directed to the occurrence of root-disease on sugar-cane which in many districts of Mauritius is annually causing considerable loss.

Much time has been expended in connection with the introduction into Mauritius of Scolia oryctophaga from Madagascar as a parasite of Oryctes tarandus. The introduction of the insect was successfully accomplished during the year and the task of establishing it in the Colony is being proceeded with.

The Phytalus Smithi campaign was conducted on previously established lines and a total of seventy-three millions beetles were destroyed in the 1916–1917 campaign.

Conclusive evidence was obtained during the year that the parasite Tiphia parallela had established itself in the infected area, and both males and females were observed in numbers on Espérance Estate. Steps were taken to assist the spread of the insect throughout the infected area.

The census of larvæ in infected fields was again carried out during the months of April to June, while the collection of larvæ was continued in heavily infected areas.

The Veterinary division was during the early months of the year fully occupied with matters in relation to the outbreak of Foot-and-Mouth disease. A special report on the outbreak was presented to the Council of Government and the Board of Agriculture.

The report of the Statistical division deals with matters connected with the Sugar industry of the Colony while a special section is devoted to consideration in relation to the cultivation of food crops.

The work of the Agricultural Instructor has been largely concerned with Cooperative Credit Societies and with the allocation of blocks of Crown Land for cultivation of food crops.

These efforts born as they are of the immediate needs of the situation in relation to requirements for increase production of food crops, are capable of exercising a permanent influence on the policy of agricultural development and, if they achieve success, of indicating possible lines of progress in the future.

The work of the division of Experimental Stations has consisted in the development of lines of policy previously defined. Progress has been made with the further systematisation of the raising of new seedling canes at Réduit and Pamplemousses and with the trial of these and of imported varieties on a more extended scale at both these experiment stations and by means of cooperative experiments on estates in the different cane growing areas. In all six such series of experiments have been laid out during the year under review and their further increase to a total of 9 is under consideration.

Manurial experiments with canes were reaped at Réduit and on 7 estates, the results of which latter were communicated to the managers concerned. At present further manurial trials are to some extent hampered by difficulty in obtaining manures.

An economic station for the trial of different varieties of food producing crops has been established at Réduit while corresponding trials have been again carried out at Pamplemousses. A demonstration and experiment plot for similar trials have also been established at " La Ferme. "

The need for the establishment of experiment stations in different parts of the Colony for the trial of varieties of cane and also of other economic crops, is very real owing to the variety of conditions of soils and climate encountered.

Plant introductions have been hampered during the year by difficulties of transport owing to war conditions. The principal introductions of economic importance comprised the seedling cane H 109 and certain varieties of coffee and tobacco from Madagascar.

The Cattle Breeding Station at Réduit has made satisfactory progress during the year. A number of pure and half-bred calves have been born and bulls have been loaned to several estates. As the result of progress made it was found possible to put forward a definite scheme for the breeding and sale of cattle during the year which was laid before the Council of Government and the Board of Agriculture and approved. The increase in the number of stock has necessitated the erection of additional housing accommodation for which provision is being made.

The existence of the Cattle Breeding Station provides a means for ameliorating strains of stock in the island and also affords facilities for experimental works on breeding and feeding of stock, making of milk records, and the preservation and storage of fodder and manure.

The experiments in the cultivation of tobacco were extended during the year, and the results of the previous years, experiments published in Bulletin form. The results up to the present are distinctly encouraging.

Assistance has continued to be rendered to the Education Department in laying out School gardens through the medium of the Agricultural Instructor.

Inspection of plants imported into the Colony was continued by the scientific staff. 25 consignments were examined at the General Post Office and 101 at the Customs.

The Director of Agriculture continued to discharge the functions of Registrar of Cooperative Credit Societies during the year.

At the end of 1917 there were 24 Cooperative Credit Societies in operation ; 1 new Society was registered in October, and there appears to be some prospects of further development. The total membership at the end of the year approximated to 3,000. While the Societies continue to require

close supervision, there is no doubt that the hold of Cooperative Credit in the Colony has become very considerably strengthened and there is every reason to believe that, given adequate supervision and guidance, the future of the movement is assured, while the principles and advantages of the system are now widely known and appreciated throughout the Indian section of the community. The results obtained may be taken as indicative of the soundness of the recommendation which led to the inauguration of the movement.

Enquiries have been conducted into the question of the production of motor fuel from alcohol during the year, and a report thereon with special reference to the denaturation of such products has been presented to Government.

The Director of Agriculture was in September appointed a member of the advisory Committee on Food control. Information regarding the cultivation of food crops in the Colony was collected from time to time and furnished to the Government, while the Director of Agriculture gave evidence before the Committee of the Council appointed to consider the question of food production. Meetings of peasants were organised by the Department of Agriculture in August and September with a view to emphasising the necessity for the increased production of food crops.

The question of the reduction of cane traffic on the Government Railway owing to shortage of railway material was referred to the Department of Agriculture in November and certain recommendations made to the Government.

Attention was given to Methods of fixing atmospheric Nitrogen by electrical means for the production of fertilisers. A special report thereon was prepared for submission to the Board of Agriculture.

Publications

A new leaflet series was inaugurated during the year for the purpose of supplying summarised information to the public on matter of immediate importance. Proposals were further made for the inauguration of a Department Journal to supplement the existing Bulletin series. These proposals are in abeyance owing to shortage of paper.

The following publications were issued :—

Leaflet series :

(1)—Late blight and rot of Potato.
(2)—The effect of the cultivation of Maize on the soil.
(3)—The nutritive value of Maize cobs.
(4)—The manurial value of commonly occurring organic substances.
(5)—Root-disease of sugar cane.

Bulletin series :—

(1)—The improvement of Maize by selection.
(2)—Trials with Réunion Tobacco in 1916–17.
(3)—Moth-borers affecting sugar cane in Mauritius.

The following *memoranda* and reports have been proposed and submitted to the Board of Agriculture :—

(1)—Report on outbreak of Foot-and-Mouth disease.
(2)—Interim report on visit of Entomologist to Madagascar.
(3)—Final report of Entomologist on results of visit to Madagascar.
(4)—Memorandum respecting policy to be pursued in relation to the feeding of cattle at Réduit Central Experiment Station.

Legislation

The following Ordinances and Regulations relating to Agriculture were passed during the year :—

Ordinance No. 17 of 1917 to replace Ordinance No. 20 of 1915 providing for the Registration of Agricultural Chemists.

Ordinance No. 1 of 1918 to restrict the slaughtering of cows and calves in the Colony.

School of Agriculture

There were 6 students in training under the Department of Agriculture during the year. In April 2 third-year students, Messrs. C. d'Avoine and S. Gébert, completed their 3 years' course and successfully passed their final examination for the diploma of the Department. 3 students were attached to the laboratories of sugar factories during the crop.

During the year efforts were made further to extend and define the work in the students' curriculum.

Provision was made for a regular course of field work to be taken by second year students and an Agricultural note-book prepared for use by students, similar in form to the Chemical and Biological note-book already in use ; this is at present in manuscript form, but it is eventually hoped that a supply may be printed for use.

A scheme of reading for the guidance of students was also prepared together with a time-table of studies Lectures were delivered by departmental officers as opportunities offered during the year. So far as possible the object held in view in delivering these courses of lectures was to make them supplementary to the reading of students.

Arrangements were further made for students to specialise in their third year, should they so desire, the 3 lines of specialisation being : Agricultural and Sugar-House Chemistry, Agricultural Biology and Agriculture.

Expenditure and Receipts

The expenditure of the Department has been as follows :—

Expenditure	Rs.	c.
Personal Emoluments	47,263	...
Maintenance of gardens	12,699	96
General Services	13,535	14
Prevention of Plant Pests and Diseases	20,106	16
Prevention of Animal Diseases	31,804	67
Experiments with Aloe fibre	543	31
Upkeep of Experimental Dairy	1,572	15
Upkeep of Stock	5,203	18
Establishment of Demonstration Plots	1,346	25
Subvention to " Société Horticole "	500	...
Travelling expenses	3,665	26
Miscellaneous Cooperative Credit Societies	13	...
Development of Maize Industry	18,927	45
Development of Tobacco Industry	8,322	18
Special—Importation of Stock	11,790	29
Do. " La Ferme Food Settlements "	6,117	35
Total ... Rs.	183,409	35

The receipts were as follows :—

Receipts	Rs.	c.
Analytical Fees	29	...
Veterinary Fees (Surra-treatment)	224	36
do. Customs	687	...
Students' fees	300	...
Rent of Tea plantation	1,100	...
Sales of Canes	8,370	77
Sale of Flowers, Plants, &c, ...	897	67
Services and sale of Animals and Poultry	733	49
Miscellaneous	290	03
Total ... Rs.	12,632	32

H. A. TEMPANY,

Director of Agriculture.

8th May, 1918.

ANNEXURE I.

REPORT ON THE WORK OF THE

DIVISION OF CHEMISTRY

The following analyses were carried out by the Chemical division during the year 1917.

	Samples	*Dosages*
Artificial Manures	9	17
Fumiers and Guanos	11	23
Lime	16	16
Spirits	7	14
Plants	3	15
Waters	5	45
Cane-juices	515	1,030
Soils	4	64
Miscellaneous	1	5
Total	571	1,229

The fees for these amounted to Rs. 102.

The samples of imported manures forwarded by the Customs Department for analysis during the year were 6 in number (2 whale flesh, 1 Sulphate of Ammonia, 1 Bone phosphate, and 2 Superphosphate) as against 49 samples forwarded in the previous year.

The average composition of mixed artificial fertilisers sent in for analysis during the past 5 years was as follows. The tendency to increase the Nitrogen and to decrease the Phosphoric Acid and Potash as a result of shortage of the 2 last is interesting :—

	Total Nitrogen	*Total Phosphoric Acid*	*Total Potash*
1913	11.20	13.27	7.11
1914 (Jan.–July) ...	9.70	10.02	6.50
„ (Aug.–Dec.) ...	11.39	9.40	6.85
1915	9.23	9.11	4.19
1916	10.50	7.00	0.35
1917	11.97	6.53	2.71

The increase of Potash in the last year is presumably due to importation of Nitrate of Potash from India.

Natalite trials

A careful series of trials was carried out in August and September in order to ascertain whether the patent petrol substitute made of alcohol and ether, known as "Natalite," could be satisfactorily denatured for sale locally. Local regulations insist on the use of pyridine, methyl alcohol and a solid blue aniline dye, the 2 last being objected to by the prospective manufacturers of the compound as being harmful to the cylinders of internal combustion engines.

The trials included (1) the preparation of Natalite, involving laboratory manufacture of ether (2) the addition of pyridine and ammonia to all samples, and the further addition of either methyl alcohol or petrol or benzene, (3) fractionation with or without addition of existing agents to renature the mixture.

The results eventually arrived at shewed that a simple distillation with or without Sulphuric acid and Permanganate of Potash did not produce potable fractions when pyridine with petrol or methyl alcohol or benzene were added. Ordinary denatured alcohol on the other hand could be readily denatured by distillation with an oxidising agent.

Results were finally compiled in a report by the Director and the Chemist, in which pyridine and petrol were recommended, methyl alcohol and the dye being regarded as unnecessary.

Staff Changes

The work of the Chemical division was seriously hampered during the year by frequent staff changes. From November 1916 to May 1917 the Chemist acted as Director of Agriculture, and during that period the work was further increased by the departure of the Agricultural Instructor and the Chief Overseer for the war. A temporary Chemical Assistant was appointed from January to June in place of the former Assistant who had held this post from January to December, and on July 1st the post was definitely filled by a former student, Mr. C. d'Avoine.

GILBERT AUCHINLECK,
Chemist.

ANNEXURE II.

REPORT ON THE WORK OF THE

DIVISION OF BIOLOGY

The Entomologist was on duty leave in Madagascar during 3 months (from May to August) with a view to importing therefrom natural enemies of the Gros Moutoucs (Oryctes tarandus).

The results of his mission have been recorded in an interim report forwarded to Government on the 6th of September and in a second one sent in December.

Appointment

In August Mr. S. Gébert, a graduate of the School of Agriculture of this Department, was appointed Assistant in this division.

Amalgamation of the Mycological and Entomological Divisions

As a result of the transfer of the late Director of Agriculture who had charge of the Mycological division, this division has been amalgamated with the Entomological one and placed under the Entomologist.

Phytopathology

The common insects pests of various crops already referred to in previous reports have again been from time to time reported to this division and have been dealt with as usual, with good results.

Importation of Insects

Eri Silk-worm.—On several occasions material of this silk-worm has been received through the kindness of the Imperial Entomologist of India. Owing, however, to long delay during transit, the material reached the Department too late, the insects having died and the eggs hatched out *en route.*

Scoliids.—Together with Scolia oryctophaga which has been imported from Madagascar as natural enemy of Oryctes tarandus, several other species have been introduced. The details of this importation have been recorded in special reports to Government.

Distribution and Spread of Tiphia parallela

This insect has spread over a much larger area than it had last year.

In May and June, systematic distribution was made on spots it had not reached yet. The insect is now to be found at Beau Plan, Mon Rocher, and higher parts of The Mount.

Phytalus Smithi destruction

Appointment.—Owing to the transfer of Mr. A. Delord to the Maize Sécherie at Mahebourg, Mr. Edwin Rohan was appointed in his stead as Officer-in-charge of beetle destruction.

Phytalus

The number of insects destroyed was nearly the same as for 1916, the total number of larvæ and beetles being 73,503,579 against 71,320,870 for 1916.

The most infected areas were the higher parts of The Mount Estate including Petite Rosalie and Le Plessis, and Beau Plan Estates.

The total expenditure for the 1917 campaign was Rs 20,267.04 against Rs 22,658.19 for 1916. (see table page 24)

Fungoid Diseases

Potato disease.—(Phytophtora infestans).—This desease again affected seriously the potato crop It was successfully demonstrated, at Phœnix, that the disease can be controlled by Bordeaux mixture applied systematically. A leaflet has been issued on the subject.

Filao diseases.—Two diseases of filao were investigated. One affecting the bark is apparently a physiological malady the causes of which have not yet been ascertained. The other is due to a fungus (Trichosporium vesiculosum) which invades the root system and causes thus the death of the plant.

Sugar cane.—The root-disease of the sugar cane already referred to in last year's report was again prevalent on several sugar estates.

The lime treatment already recommended last year proved successful in checking the disease.

Owing to the widespread of the infection, a leaflet has been issued. The main features of the disease are described and measures are recommended for its control.

Fruit trees and Garden crops.—Peach and Citrus trees were noticed to be suffering from die-back. This malady is being studied.

Garden crops suffered as usual from attacks of various fungi. In most cases the diseases could have been kept under control by means of appropriate treatment.

Poultry

The supervision of the poultry run was taken up by this Division in October as it was considered that it should be run in a more rational way.

An additional run is being set up for rearing chickens according to scientific principles and it is hoped that this will prove beneficial to those concerned.

A special Bulletin on the various diseases that have been investigated is in preparation.

D. D'EMMEREZ DE CHARMOY
Entomologist.

ANNEXURE III.

REPORT ON THE WORK OF

THE VETERINARY DIVISION

Importation of Animals

During the year 1917 the number of steamers and schooners which arrived with animals was 31. Imported animals came from England, South Africa, Madagascar, Réunion, Rodrigues and Oil Islands. As no quarantine station exists in the Colony, Government has decided to have one erected. To this effect, several places, such as Ile-aux-Tonneliers, Abercrombie, Fort Victoria and Fort William have been carefully examined and the latter place has been selected as answering to the desiderata required.

Contagious Diseases

Surra.—During the year Surra was detected on the following estates : Les Salines, Bel Ombre, Balaclava, Bagatelle and Réunion. Animals of these estates have been placed in quarantine and the local Soamin and Arsenic treatment employed. The results obtained have been successful, affected animals having been controlled with negative results and released from quarantine. In the villages, four cases have been detected, at Moka, Petit Cap, Cassis and Souillac ; some of these animals died and others were slaughtered. At the Bacteriological laboratory 2 mules were treated with Laveran's method, a sample of this product having been received by the Bacteriological Laboratory and handed to the Veterinary division. The mules treated relapsed five times and finally recovered after 8 months, treatment with negative controls. They have been given back to their owners and fortnightly returns of their condition and work are forwarded to the Department, in order to control the efficacy of the treatment, before applying for the product. Another animal is still under observation.

Foot-and-Mouth.—Several outbreaks of this disease were recorded in 1917. At the exception of Savanne, Grand Port, and Southern Rivière Noire districts, the whole island was infected. The severe measures taken re : movements of animals and transport of manure, decreased the percentage of cases. Moreover, a systematic examination of affected animals and the control of villages where the disease had occurred was carried out, and about 80 % of milch cows and draught cattle of the different villages were examined. In the month of April no cases were detected, and in May the whole island was free from the disease.

Pyroplasmosis.—Two fatal cases of Pyroplasmosis were recorded at Réduit on milch cows. Both animals, which were gravid, died of this disease before any treatment could be employed. Prophylactic and hygienic methods used seem to have given very good results, for no other cases of the disease were detected.

Epizootic lymphangitis.—The disease was detected on a Sandalwood poney, the property of an Indian of Souillac. The animal was placed under quarantine for treatment. As no improvement was noticed, the animal was slaughtered one month after.

Disease on sheep.—At Savannah estate a disease of a contagious character was observed on the herd. After examination of the affected animals, isolation was ordered and a treatment applied. One week after they were all in good condition. At Volmar estate a similar disease was observed, after the transfer of the affected animals into new pens and modification of the food, 50 % of the animals of that estate recovered.

Government Animals

Animals of the different Departments were examined weekly and were treated for diseases as occasion required.

Slaughter-house

During the inspections of the Slaughter-house in 1917, the following seizures were ordered :—

Tuberculosis	*Cachexia*	*Extensive bruising*
2 carcases.	2 carcases.	1 carcase.

Organs such as livers, lungs, mammary glands were seized for hepatitis, pneumonia, bronchitis mammitis, abscesses, and bruising. Rotten meat was seized at a butcher's shop of Rivière des Anguilles, and the seizure of a carcase at Curepipe market was maintained.

Lectures to Students

A series of lectures on Live Stock, the different methods of breeding, feeding and general details on the different species of cattle, was delivered to the Students of the Department. The lectures were regularly attended to and seemed to be of great interest to them.

Dipping Tanks and Pastures

The importance and necessity of dipping tanks is getting more and more known and appreciated in the Colony, many estates have already constructed their tanks and are satisfied with the results obtained. It is, in my opinion, a great step towards the improvement of breeding cattle in Mauritius.

principally in districts where ticks are abundant ; and I further add that it is likely to cause immunisation against Surra.

Another question of great importance is that of Pastures and their management. A certain number of animals die yearly of general emaciation due to the scarcity of pasture. Steps should be taken by owners to increase the area of their pastures and to keep these in satisfactory condition by removing all noxious plants which might decrease the extent of the pasture and alter its quality.

F. E. LIONNET,
Veterinary Surgeon.

ANNEXURE IV.

REPORT ON THE WORK OF THE

STATISTICAL DIVISION

The following statistical questions were dealt with during the year 1917 :—

Quantity of vesou sugar still remaining up-country in January 1917.

Final estimate of 1916–17 Crop.

Annual agricultural statistics for the 1916 Blue Book (area under sugar-cane, foodstuffs, economic plants, &c ; machinery on sugar estates, live stock, &c.,).

Preliminary Estimate of the 1917–18 Crop (communicated on 31.5.17 to the Board of Agriculture).

Average extraction sugar per cent. of cane (1916–17 Crop).

Inquiry concerning additional area under foodstuffs on estates, and tentative estimate of the weight and value of the minor crops.

Average sale price vesou sugar for the last ten years.

Average yield ton-cane per arpent on estates (1912–16).

Minor agricultural productions in 1916–17 (vanilla, tea, &c.,).

Revised forecast of the 1917–18 Crop (communicated on 25.7.17 to the Board of Agriculture).

Probable vesou output (1917–18 Crop).

Usual statistical data for the International Institute of Agriculture at Rome.

Local consumption of sugar in 1916–17.

Average sale price of sugar (1916–17 Crop).

Comparative weekly sugar movements since 1902 from factories to Town.

Percentage of vesou sugar to total crop since 1901.

Investigations were also conducted into the average sale price realized by planters of all categories per metric ton of cane since 1907 ; on railway cane traffic ; on cost of production over a certain number of years and other similar statistical studies.

Area under sugar cane

There were at the beginning of 1917, 167,560 arpents under cane cultivation, against 163,109 at the same period of 1916. The total increase for the last 5 years has been 23,080 arpents. Out of the above total of 167,560 arpents 72,388 or 43.2% were Indian grown. Since 1910 the increase in the Indian cane cultivation has been 26,474 arpents.

Animals on Estates

There were still 20 mules on the estates in 1916, against thousands before the Surra outbreak. The number of horses was practically the same as in 1915, viz : 389. A decrease of 1,522 was recorded in the number of horned cattle ; 18,341 head having been recorded against 19,863, in 1915 ; the greatest reduction was found to occur among calves in stables ; 1,976 having been recorded as against 2,551 in the preceding year, i. e., 575 less. In the herds, the number of head was less by 361, i. e., a total of 8,374 against 8,735 in 1916, while the number of bullocks at work dropped from 5,406 to 5,196.

1916–17 Sugar Crop

The total sugar crop of 1916–17 was tons 209,035. It was the lowest recorded since 1911 (tons 169,550) when the area under cane was 19,000 arpents less. The total quantity of cane crushed was tons 2,101,000 ; 80,000 tons more than in 1915, with an average extraction sugar per cent. of cane of only 9.95 against 10.62% in the previous year. So low an extraction has not been recorded in the Colony since the installation of the 3rd mills. The relatively high tonnage of cane cropped was due to the fact that the standing crop, favoured by the season, was already large when the island was visited by the exceptionally late cyclone of May 26th, 1916. The usual preliminary crop estimate issued 10 days before by this division was 260,000 tons. The consequent reduction was calculated as likely to be 16% , provided the climatic conditions continued normal till the reaping season. The reduction actually experienced was about 20% , a big decline in the density of the juice having occurred after unusual and heavy rains in October. The following passage taken from the Director of the Royal Alfred Observatory's Report for 1916 may be appropriately quoted in this connection : " The Department of Agriculture estimated the damage at 16% of the standing crop, immediately after the cyclone and has now issued a statement (in December) showing the difference (20%) between the crop as estimated in May before the cyclone and as finally harvested. A certain proportion of this registered loss however must evidently be ascribed to the adverse winter conditions. It is probable therefore that the real effect of the high wind velocities on the yield of sugar

approximated very closely to the original estimate of 16% placing the storm (from an agricultural point of view) as the 6th worst on record."

Only 2 usines reached 11% extraction, while, on the preceding year, the 12 best recorded at least 11%. The vesou percentage dropped to 80.2%, against 82.6% in 1915.

The 1917–18 Crop

The 1917-18 crop is estimated at 225,466 metric tons. Though higher by about 16,500 tons than that of 1916-17 it is still a short crop being about 30,000 tons below the normal.

The following table gives the average yearly sugar production of the island during the last three quinquennial periods :—

Period	*Average*	*Increase*	%
	Tons		
1903–07 ...	188,300 ...	... ...	...
1908–12 ...	210,700 ...	22,400 ...	11.9
1913–17 ...	235,200 ...	24,500 ...	11.6

Local Sugar Consumption

The apparent sugar consumption in 1916–17 was tons 5,452.6, as follows :

	Tons		
Total factory output :	209,035.3		
Plus : 1st hand stock on 31.7.16	252.2		
Total	209,287.5		
Minus : Exports	196,178.9		
	13,108.6		
Less in store on 31.7.17	7,656.0		
		per head	year
Apparent consumption 1916–17	5,452.6	K	14.48
„ „ 1915–16	6,085.0		16.21
Against an average for the previous 5 years of	6,360.0		16.98

The 1916 rate of consumption represents a daily expenditure of about Rs. 4,480 (tons 14.9 = 186 bags).

The present rate of consumption in France is 500 grams a month per head or 6 kilos a year against 17.33 kilos, pre-war rate of consumption.

Average Sale Price

According to data collected from the usual sources, the general average sale price of 204,455 tons sugar recorded, out of a total factory production of 209,035 tons during 1916–17 has been Rs 12.42 net per 50 kilos. This is the highest general sale price recorded since 1882, when Rs. 12.53 was obtained. The general average for the five quinquennial periods preceding 1914 were as follows :—

1889–93	Rs. 10.31	
94–98	8.59	
99–03	7.63	
1904–08	7.60	
09–13	7.87	
1914	11.33	Rs. 11.84 = 50% over 1909–13 period.
15	11.78	
16	12.42	

The 1917 average will hardly reach the 1914 average.

Sugar movements

The comparative sugar movements from factories to Town since 1902 has been worked out. Up to 1905, the maximum arrivals of sugar in Town in any one week oscillated between 100,000 and 140,000 bags ; in 1906, the record of 163,700 bags arriving in Town in one week was reached. That record remained unbroken until 1913, when on the week ending 31st October, 181,392 bags were received in Town. This record was again broken in 1915 (183,366 bags) and in 1916 (195,194). The 1916 crop gave a record of an average of 32,532 bags per day during a whole week. The record of the first million bags reaching Town belongs to the 1914 crop and occurred in October 5th. The 1913 and 1917 crops keep the second rank, their first million bags reaching Town on the 15th October. The record of the second million bags in Town belongs to 1914 (15th November). The second rank belongs to 1913 (25th November) and the third to 1917 and 1909 (4th December).

Percentage borne by Vesou Sugar to Total Crop

The arduous work of calculating the percentage of vesou on the crop for a series of years was completed during the year ; the results cover a period of 17 years (from 1901 to 1917). From 1901 to 1909 data have been gathered from a number of usines sufficient to make out a reliable general average, while since 1910 figures have been obtained from practically all the usines.

The percentage of vesou has risen from 68.3 in 1901–5 to over 90 o/o in 1917. The white sugar

(vesou and first syrup) percentage has passed from 83.5 o/o in 1901–5 to very nearly 95 o/o in 1917, while the low grades have dwindled from 16.5 o/o to about 5 o/o.

Planters' Canes

The following table gives the general average price per ton of cane obtained by planters of all categories, large and small, supplying canes to usines. The figures are calculated to a cash basis irrespective of whether the canes are paid in cash per ton at the weighbridge, or in sugar according to the average extraction or at a fixed ratio of so many pounds sugar per ton cane delivered.

Periods	*Average received per ton cane* Rs.	*Average sugar sale price* Rs.	*Equal to lb. sugar per 1,000 lb. cane*
1894–98	9.79	8.59	57.0
1899–03	10.43	7.63	68.4
1904–08	10.46	7.60	68.5
1909–13	10.72	7.87	68.2
1914–16	16.77	11.84	70.8

Cane traffic (Railway)

Investigations have been made on the cane traffic on the Government Railways. It has been ascertained that as an average about 8 o/o of the total cane crushed is transported by rail.

Consumption of Vegetable Food Stuffs

Investigations have been conducted into the average food requirements of the Colony per head of population ; it has been established that the average total daily consumption, human and animal, of vegetable food stuffs in tons of grain amounts to 247.6 tons. The actual total production of food stuffs grown in Mauritius annually in terms of grain is only approximately 9,000 tons. That is to say the Colony under present conditions only produces sufficient food to last 36 days, a dangerously low proportion at the present juncture.

H. ROBERT,
Statistician.

ANNEXURE V

REPORT ON WORK OF DIVISION OF

EXPERIMENT STATION

REPORT OF AGRICULTURAL INSTRUCTOR

Mr. F. Birkinshaw, the Agricultural Instructor, left Mauritius for military duty with the Imperial Forces on February the 6th. I assumed work as Agricultural Instructor on the following day. On the 7th March I was appointed to the post of Chief Censor of the Government ; I have continued to discharge the duties of both these offices to the end of the year. In consequence it has not been possible to devote the whole of my time to the work of Agricultural Instructor.

Cooperative Credit Societies

The supervision of the operations of the Cooperative Credit Societies at the present time constitutes the most important part of the duties of the Agricultural Instructor. Full details of the working of these Societies is contained in the report of the Registrar of Cooperative Credit Societies which is published as a separate document. It may however be said that the Societies continue to make satisfactory progress and the condition is in every respect sound ; in all 24 Societies were operating at the end of the year, one new Society having been registered in November last. The total membership of the Societies now approximates to about 3,000 while the share capital is approximately Rs. 116,000. The Societies were inspected four times during the year, once by Mr. Birkinshaw in January, and by myself in March, June and December. The annual general meetings of all Societies were held in July and were attended by the Registrar and myself.

Demonstration Plots

Various Demonstration plots were inspected during the year. Owing to a variety of causes it was found expedient to close the Demonstration Plots at Bon Accueil and Petit Raffray after the reaping of the cane crop in November 1917.

School Gardens

School gardens were visited as opportunity occurred throughout the year and advice tendered to Head Teachers and others on their management. Sites for School gardens were selected at Trou-aux-Biches, Surinam and Petite Rivière.

Instruction in Agricultural Matters to Small Planters

Opportunities were taken whenever possible of visiting the holdings of small planters and advising them on agricultural topics. On a number of occasions the services of the Agricultural Instructor were requisitioned for advice with regard to lands of peasant proprietors on which canes were not growing well ; sometimes these requests were accompanied by a desire for a performance of analysis. On all occasion it was found that the results were attributable to bad cultivation and lack of manure ; advice was tendered in all cases which if followed was calculated to give rise to improvement.

Cultivation of Food Crops

Special efforts have been made throughout the year to induce small planters to pay greater attention to the cultivation of food crops. The appeal of His Excellency the Governor to Agriculturists to increase the area under cultivation in food crops was distributed widely among the small planters of the island. During August a series of meetings was organised in Moka, Grand Port, Plaines Wilhems and Pamplemousses using the Cooperative Credit Societies in these different districts as nuclei. All of these meetings were attended by the Director of Agriculture and myself and addresses were delivered urging the necessity for increasing the production of food stuffs and assistance was arranged to be given in the matter by a free distribution of planting material and special loans to Cooperative Credit Societies for the purpose of cultivating food crops. By the end of the year special loans amounting Rs. 1,000 had been arranged for Cooperative Societies for the latter purpose.

Schemes for the development of suitable areas of Crown Land under cultivation in Food Crops

During the year a number of proposals have been put forward for extending the cultivation of food crops on Crown lands available for the purpose by means of leases at nominal rentals. The schemes fall under three heads : 1. Definite food settlements by collected private individuals ; 2. Development of Crown lands by the medium of Cooperative Credit Societies ; 3. Development of Crown lands through private individuals who sublease to small tenants. With the first of these groups I have not been concerned. In relation to the 2nd and 3rd schemes by the direction of the Governor, the Director of Agriculture was furnished in July with a list of Crown lands which might be made temporarily available for food cultivation in different parts of the Colony. It appeared on investigation that in certain cases a useful purpose might be served by leasing suitable lands to Cooperative Credit Societies with a view to allocation among member subject to supervision and direction by the Department of Agriculture. By the end of December four such leases had been approved while a considerable amount of work had been accomplished on one such holding.

At the same period two additional leases of land had been made to private individuals with the option of subleasing to small tenants. In all cases subleases are under the control of the Agricultural Department and no increase of rent is allowed as between leases and subleases.

A further scheme providing for the establishment of a demonstration lime plot at Belle Rive in Flacq was combined with a system of subleases to tenants who cultivate the interlines of limes in provision crops.

In all leases a nominal rental of R. 1 per arpent per annum is charged with the addition of the fee for the lease, while the lease is limited to three years as a maximum. At the end of that time it is contemplated that the land will be handed back to the Forest Department in a fit condition for immediate stocking with trees.

These schemes appear to offer satisfactory prospects of success and may be expected to add about 250 acres to the area under food crops in the Colony.

The lands under development were in all cases visited and reported on by the Agricultural Instructor before allocation and those allocated have since been visited by him on several occasions either alone or in company with the Director of Agriculture.

J. W. SHAND HARVEY.
Acting Agricul. Instructor and Inspector, Cooperative Credit Societies.

ANNEXURE VI

FOOD PLANTATIONS AT "LA FERME"

In May 1917 proposals were approved for the leasing of 150 arpents of Crown land at "La Ferme" for cultivation under food crops. The object in view was to establish a definite settlement for the cultivation of food crops in small holdings. Regulations of governing the allotment of land were prepared and approved, published in the Official Gazette and distributed in suitable quarters.

The scheme included the establishment of a demonstration plot, creation of necessary roads, and the survey of the land in lots of one acre each.

Under the regulations no tenant is permitted to occupy more than five acres of land ; leases are for either one or three years and rent is payable at the rate of Rs. 1 per acre per annum for the period of the lease ; in the event of the lease being renewed after the first three years the rental exigeable would be raised to the rates usually current.

By the end of the year the majority of the lots had been taken up and about 30 acres actually planted. A demonstration plot had also been established.

The locality in which the land is situated is the driest in the island while the land is in many places very stony and difficult to clear owing to the abundance of Raquettes (Opuntia sp.). Nevertheless the results so far obtained show that the conditions are such as to permit of certain food crops being grown with prospect of success. For supervision of the work in the early stages an officer bearing the title of Overseer of Food Plantations was appointed for temporary duty who undertook the laying out of the demonstration plot and the establishment of the settlers on various plots.

It should be added that in addition to the foregoing scheme, in the early part of the year similar arrangements were approved for the leasing of about 50 acres of land at Signal Mountain and 15 acres at St. Martin.

These schemes were inaugurated under the direction of the Forest Department, but by the end of the year proposals had been approved for their transfer to the Agricultural Department.

Towards the end of December proposals were approved for the supervision of these three schemes together with those described in the report of the Agricultural Instructor by one officer temporarily appointed for the purpose, thus bringing the whole of the work in this direction under the control of one officer and facilitating administration and supervision.

ANNEXURE VII

REPORT OF THE CHIEF OVERSEER,

CENTRAL EXPERIMENT STATION, RÉDUIT

Staff changes

Mr. C. A. O'Connor left Mauritius for military duty on active service on April 28th. He was replaced by Mr. L. d'Unienville in an acting capacity. Mr. L. d'Unienville resigned at the end of November and was succeeded by Mr. F. Berbeyer.

Mr. M. Maya was appointed junior overseer, Réduit, in July and was subsequently seconded for duty as overseer of food plantations.

Plant Introductions

Seedlings H 109 was imported from Hawaï and seedling L 511 from Louisiana, and both were established at the central experiment station during the year. Both these canes have attracted attention in their countries of origin.

Introduction of canes on any scale were precluded by war conditions the only other cane introduced being the Mignonne and Mignonne rayée from Bourbon.

Varieties of coffee were imported from Madagascar, three varieties of Kaffrarian corn and three varieties of Soybeans from South Africa.

Plant Distribution

A large number of new local and introduced cane varieties were distributed during the year from Réduit.

In all 6,420 cuttings of 31 varieties were distributed to 40 estates during the year. Of the imported canes among the most promising for the year may be mentioned the Java varieties P. O. J. 213, 36, 161, 23 ; Barbados varieties 3390, 3412, 3405, 3747, 1753 ; Sealy seedling ; while of the various local varieties the seedlings 33/12, 33/23, 33/33, 33/55, 33/73 and Uba No. 4 may be mentioned as showing recent promise.

In connection with efforts made to extend the cultivation of food crops large distribution of planting material of maize, sweet potatoes and manioc were made to small planters. Special arrangements were carried out for supplying planting material of this description to Cooperative Credit Societies and to the various food settlements. The total quantities distributed are as follows : Maize—857 kilos, Manioc—420 kilos, Sweet potatoes (various cuttings)—1,978 kilos.

Trials with a large number of cane varieties are experimentally reaped at Réduit, while the various series of manurial experiments were also harvested under experimental conditions. 1,120 new seedlings were raised and planted out, while six hole trials of 191 seedlings from Réduit and Pamplemousses were laid out during the year.

Considerable time was devoted to the further systematisation of trials with new varieties of cane both locally raised and imported. Series of systematic records for field trials with new varieties of canes were laid down during the year. At Réduit and Pamplemousses and on estates in different districts of the island various experiment stations were established, these latter trials consisting of 40 to 60 holes each. Experiments comprising from 50 to 100 selected varieties were planted at Réduit, Pamplemousses, Highlands, Médine and Richelieu and plans for the further extension thereof formulated. Proposals were further discussed and approved for the installation of a small power mill for crushing varieties grown on experimental plots and for the purchase of a good field weighing scale.

Manurial experiments were reaped on seven and variety trials on one estate and the results communicated to the respective managements. A report of the results of these experiments is in preparation.

Considerable attention was devoted to trials with food producing crops. A field at Réduit formerly cultivated in old ratoon canes was dug up, thoroughly cultivated and manured and laid out as a permanent experiment station for trials with food producing crops.

The following experiments were laid out thereon :—

1.—A series of breeding trials with a view to the improvement of local types of yellow maize by selection ;
2.—Trials with 21 varieties of sweet potatoes ;
3.—Trials with 41 varieties of manioc ;
4.—Trials with 14 varieties of pistache ;
5.—Trials with 3 varieties of Kaffir cane ;
6.—Trials with 8 varieties of local beans and peas ;
7.—Trials with 10 varieties of yams ;
8.—Trials with 3 varieties of soybeans.

The plot was laid out with cross roads to facilitate access to the different experiments and presents a neat and pleasing appearance.

Improvements at Central Experiment Station

The field adjoining the Director's quarters formerly in bush and low growth of trees, was cleared, the stones removed and land laid out for experimental planting.

Grass was planted in the yard of the head office and the approach to the experiment station was opened up and improved.

The waste piece of land adjoining the poultry run was cleaned and planted in grass.

Other Plantations

A field ¾ of an acre in area was experimentally planted in Tobacco in August.

About 7 acres of land were planted in Manioc, Sweet potatoes and Maize for the purpose of oviding food for the cattle at the Cattle Breeding Station.

Yields of Cane at Central Experiment Station

The total weight of cane reaped at Réduit amounted to 410 tons; the yield is the largest recorded up to the present and represents an increase of 130 tons over the previous year. The canes were divided between Mon Désert, Trianon, and Highland factories and sold at an average price of Rs. 15.50 per ton.

Experiment with irrigation of Sugar Cane with sewerage effluent

The experimental plot established at Cassis with the object of ascertaining whether satisfactory results could be obtained from the irrigation of sugar cane with sewerage effluent was reaped as plant cane during the year. The plot is a little over two acres in area; water was applied once a month. The canes on the whole grew well and indicated that the effluent could be satisfactorily employed for the purpose of irrigation.

The yield recorded was at the rate of 25 tons of cane per acre. Owing to circumstances the plot was cut somewhat late, while the nature of the land caused a certain amount of water logging in the lower part of the plot owing to insufficient drainage. After reaping the ratoons were moulded up and a drain cut through the entire of the plot. The young ratoons at the end of the year had made a satisfactory start with new growth.

Cattle Breeding Station

Satisfactory progress was recorded with this branch of the work. During the year a definite line of policy in relation to breeding pure bred pedigree strains of cattle for sale to planters was laid down by the Director of Agriculture and approved.

The increase in the number of Stock necessitated provision being made for the erection of an additional stable and for the extension of the pastures at an estimated cost of Rs. 7,500. At the same time arrangements were made for the erection of a proper receptacle for the storage of manure in order to obviate the unsatisfactory system formerly in vogue and for the provision of an absorption pit for the washings from the stables. The dipping tank for the cattle was completed during the year at a cost of Rs. 1,332, also a kitchen for the preparation of cooked food for the animals. A temporary stable was also erected for quarantine of animals returned from estates. The following births were recorded during the year :—

3 pure bred Hissar bull calves	
1 pure bred Ongle bull calf	
1 pure bred Mysore bull calf	
3 half bred Holstein bull calves	
2 half bred Holstein cow calves	
Total	10

The total number of bovines at the station on December 31st was 29.

The stock have all maintained excellent condition.

The following loans of stock were made during the year :—

Ongole bull to 2 estates	Holstein bull to 1 estate
Hissar bull No. 1 to 1 estate	Mysore bull to 1 estate
Hissar bull No. 2 to 2 estates	

One Hissar bull died when on loan to one estate in March. One Mysore bull was shipped to Rodrigues for services in December. One native cow was transferred to the Poor Law Department. Milch cows to the number of 14 were served at Réduit by the Holstein bull during the year.

One of the Malgache bulls imported in 1913 was sold by auction during the year, the second was broken to harness for cart work.

Sheep and Goats

The sheep and goats have continued to maintain condition. A number of Nigerian sheep were transferred to " La Ferme " with the object of establishing a small herd there, the idea being that the animals might thrive better there than at Réduit owing to the warmer climate. Loans of Ram sheep and Ram goats were made to estates during the year. Two young rams were sold to planters.

Poultry

The charge of the poultry runs was during the year transferred to the Biological Division.

F. BERBEYER,
Acting Chief Officer.

ANNEXURE VIII.

REPORT ON

PAMPLEMOUSSES GARDENS

The Expenditure on these gardens for 1917 were as follows :—

Salaries	Rs. 2,160.00
Labour	7,358.64
Miscellaneous	2,287.51
	Rs. 11,806.15

This does not include expenditure on tobacco which amounted to Rs. 7,121.

The proportional expenditure on labour for economic and ornamental work was Rs. 1,126.52 and Rs. 6,232.12 respectively :

Receipts were as follows :—

Sale of canes	Rs. 1,027.03
Other Economics	6.50
Ornamentals	56.75
Wood and Rafia	52.65
Letchi fruits	70.00
	Rs. 1,212.93

Ornamental Work

A considerable amount of work was carried out in clearing abandoned sections of the Gardens, filling depressions in lawns and removing weeds. In all 134,000 square feet of new lawns were laid down and all existing lawns cleared of weeds and stones.

A complete list of all plants growing in the Gardens was completed during the year, and labelling of those whose names are known has begun.

The ordinary work of upkeep of roads, canals and buildings was kept up as well as other work such as pruning hedges, clearing and scything lawns, &c. A new move was made towards using lawn-mowers in the place of scythers, as the work of scything about 80 acres of lawn is found to be both laborious and expensive.

Visits

There were 21,488 visitors during the year, and 424 picnics as against 22,478 and 535 in the previous year. Behaviour on the part of the public was satisfactory only two arrests on account of theft having been made.

Exchanges and Distributions

Sales and distributions of plants are hindered on account of existing legislation against cane grubs (Phytalus), but a fair amount was done in distributing and exchanging seeds.

Seeds were received from Botanical Gardens of Adelaide, and Singapore, Station Agricole of Ivoloina (Madagascar), the Durban Municipal Gardens, and various stations in the United States. Local donations of seeds were received from Mr. Gabriel Régnard, and the Port Louis Municipality.

Seeds and soil-free plants were sent to Mysore, New Zealand, Ceylon, India, Madagascar and to 4 or 5 local gentlemen. Rice seed was distributed to 6 local growers and tobacco seeds and plants to 8 applicants. The Forest Department was supplied with seeds of the following :— Pimenta acris, Terminalia arjuna, Liberian coffee, Limes, Champak, Araucaria, Areca Catechu, Vitex Cuneata, Cypress, and Eucalyptus citriodora.

Large supplies of manioc and sweet potato cuttings were distributed in connection with Departmental plans for developing Food Settlements in the Colony, the following being sent to applicants :—

Manioc...	3,653 sticks of 25 varieties
Sweet potatoes... ...	56,150 cuttings of 11 varieties.

Economics

Sugar-Cane—In July and August seed of sugar-cane was collected at Pamplemousses and at Mon Rocher, Beau Plan, Espérance, The Mount, Labourdonnais and Beau Séjour Estates and plants made. As a result 1,433 seedlings were obtained and planted out in December. The parents were :

D 130	(128 seeds)	Cane X	(15 seedlings)
M 33	192 „	D 625	32 „
M 55	416 „	D 109	
M 131	192 „	BvH 30	
DK 74	256 „	Fotiogo	10 „

The trials with new varieties were systematised and in this connection a plot of 75 varieties (40 holes of each) was laid down for comparison with similar plots at other stations.

The amount of cane cut and sold from the economics plots was 66.260 metric tons. Of these, 51.927 were ratoons, 9.563 were virgins and 4.770 various seedlings.

Tobacco

The trials with Réunion Tobacco noticed in the 1916 report were continued this year at Pamplemousses, at Riche Terre and Réduit under the supervision of the tobacco expert. In this connection 3 drying sheds, capable of holding each 4 tons of green tobacco, were erected in the gardens. A total of 836 " carottes " of about 11 kilogrammes each of dried tobacco were reaped in the trials ending April-May and October-December on the 5 acres at Pamplemousses and Riche Terre.

In August-September fresh plantings were made at Pamplemousses, reaping from which began in December 1917.

Other Economics

Trials on a fair scale were also made during the year with manioc (37 varieties), yams (12 varieties), sweet potatoes (26 varieties), maize (16 varieties), pistache (14 varieties). In addition, trials with potatoes (Solanum), rice (9 varieties), dholl or pigeon-peas were made, but with little success.

L. M. LECLERC,
Overseer, Pamplemousses Gardens.

ANNEXURE IX

REPORT ON

CUREPIPE GARDENS AND EXPERIMENT STATION

The expenditure at this Station was as follows :—

Salaries	Rs.	600.00
Labour Expenses		2,146.64
Miscellaneous		907.17
Total	Rs.	3,653.81

The receipts were as follows :—

Sale of Ornamental plants	Rs.	392.98
„ Economic		10.00
„ Flowers		249.89
Miscellaneous		22.50
Total	Rs.	675.37

Economic Section

The experimental tea plantation is growing well. The plants were pruned lightly on several occasions during the year ; two weedings were given. The first picking of leaves was begun on the 17th of December and produced 131 lbs. A severe pruning of the plants will be made this year in July and a satisfactory return is expected from this plantation next year.

Camphor Plantations.—This plantation which was inaugurated in 1913 has made fairly good growth, the trees have now reached an average height of 9 feet.

The banana plantation is making fair progress ; the soil has been forked twice and also manured during the year ; the cup was abundant. The St. Jacques variety newly introduced fruited for the first time during the year.

The pine-apples square was weeded and forked as occasion required. A number of fruits were obtained. On the whole however conditions at Curepipe are not well suited for pine-apples.

Ornamental Section

The flower garden and Rosery were maintained in good order. The beds in the flower section were planted with different varieties of annuals such as : Asters, Pentstimon, Dianthus, Anterrhinium, Phlox, Helichrysum, and Sweet peas. The Rosery after pruning and manuring flowered profusely. The Azaleas have improved since they have been cut back and trimmed. The large lawn in the upper portion of the gardens was weeded and grass mown. The trimming of bamboo hedges was done all through the year. A new avenue has been planted with young prepared layers of Camellias, and are doing very well. Many of the trees and shrubs were labelled in different parts of the gardens. Considerable improvement has been effected on the lawn adjoining the forest nurseries, the indigenous trees growing there have been thinned and partly replaced by newly introduced Eucalyptus from South Africa and Australia.

Roads

The roads and paths were kept clean and those requiring repairs were remetalled. A new entrance was opened in September near the top of the flower section ; the road leading to the Fernery was well macadamised.

Fernery

This part of the garden which is planted with indigenous ferns and ornamentals has been improved during the year. The kiosk was provided with new seats and table.

Nursery

The area of the nursery has been increased this year, a second nursery having been planted with wild roses stock for grafting purposes many varieties of roses were also raised by cuttings. A good stock was maintained of palms, azaleas, roses and other ornamental plants for sale to the public. The importance of the nursery work is yearly growing as is shown by the steadily increasing sales of plants therefrom.

Educational Section

This section consists of a collection of type plants of a number of natural orders for the purpose of assisting Botanical teaching, together with a model School garden. Demonstrations held by Mr. F. D. Harwood, Senior Science Master at the Royal College, were given thereon to pupils of the Royal College on several occasions during the year.

F. LECLERC,
Overseer, Curepipe Gardens.

ANNEXURE X

REPORT ON

LE RÉDUIT GROUNDS

The expenditure incurred upon the maintenance of Le Réduit Grounds was as follows :—

Salary of Overseer	Rs.	840.00
Wages of Sirdar and Labourers		3,023.16
Wages of Prison guards		610.00
Miscellaneous		1,366.84
...Total...	Rs.	5,840.00

Grounds

During the year the portion of the grounds in vicinity of Government House was improved by the creation of numerous flower beds, a fernery and a pergola along a tennis-court.

Balustrades and rustic seats along the Ravine were recast. All lawns, drives, avenues, hedges, tennis, croquet, and golf courts ; canals, and ponds were carefully attended to. The general aspect of the Fish pond was also improved by the modifications of its banks and the creation of an island-like mound in the middle of the pond, beds were established around, the mound being reached by a rustic bridge.

Flower-Gardens

The sowings and transplantings were generally successful and a fine display of as assorted flowers and ornamental plants was secured all the year round. The roses were particularly admired between August and November.

Kitchen-Gardens

Regular and constant control work had to be carried on against hares, rats, birds, insects and fungi of various kinds. Methodical planting and timely treatment however ensured an uninterrupted supply of vegetables throughout the year. It is worth mentioning that amongst the various insecticides used, " Katakilla powder " proved to be efficacious against Aphis which attacked globe Artichokes.

Efforts were made to produce so far as possible a continuous succession of crops and it was possible to obtain Bringelles, Cabbages and Lettuces all the year round.

Jerusalem Artichokes continued for 10 months. Strawberries were supplied uninterruptedly from July 1st to December 27th.

Rainfall

	Inches
January	12.58
February	7.35
March	5.32
April	5.51
May	1.76
June	3.40
July	3.05
August	2.63
September	1.44
October	7.91
November	4.33
December	5.42
Total inches ...	60.70

A. VALASOIS,
Overseer, Le Réduit Grounds.

ANNEXURE XI

MEMORANDUM RELATIVE TO THE MAIZE SÉCHERIE AT MAHEBOURG

The question of providing some means of artificially drying maize has attracted attention in Mauritius for the past 2 or 3 years. The matter was first brought to notice by Mr. Stockdale in 1915 who in a memorandum dated 30th of November directed the attention of the Board of Agriculture to the possibilities existing in this direction, instancing similar efforts that had been made in the West Indies. In a further memorandum dated 12th of June details concerning the results of West Indian trials were laid before the Board together with information respecting the cost of a suitable installation.

The matter was subsequently taken up by His Excellency Sir Hesketh Bell who in a minute to the Council of Government dated August 21st 1916 submitted proposals for the installation of a Hess Drier in the Grand Port district of Mauritius. These proposals received the sanction of the Council and steps were taken to carry them into effect. The necessary machinery was ordered from the United States and South Africa, a suitable site was selected on Government land near the sea-shore in Grand Port and the work of erecting a building and installing the necessary plant was set in hand without delay under the joint supervision of the Department of Public Works and the Department of Agriculture.

The work of erection was completed early in September 1917 and during September and October of that year a series of working trial with the plant were carried out which demonstrated that the installation worked satisfactorily in all particulars.

The plant comprises a No. 1 Hess Drier, a Corn sheller and a meal-making machine, 2 elevators intended respectively for the transport of shelled corn to the drier and for the transport of dried corn to the storage bins together with necessary pulleys, shafting and belting.; motive power is supplied by a 15 H P Crossley oil engine while heat for the drier is derived from a 20 H P horizontal multitubular boiler. Storage for cob corn is provided in the shape of six rat-proof storage bins while storage for 75 tons of dried maize is provided in the form of 4 cast iron containers manufactured locally with stone and concrete foundations and suitable outlets capable of being locked. The plant is contained in a galvanised iron building in the shape of an L measuring 41 feet long, 38 feet wide, and 20 feet high; internal fittings include a wide platform for the handling and delivery of cob corn and necessary staging to enable the drier to be inspected during the course of the work. The storage bins are located outside the main buildings and are covered with a galvanised iron roof to afford protection from the weather. The total expenditure on the equipment amounted to Rs. 27,722.31 (exclusive of any expenditure paid by Public Works from their special vote); this considerably exceeded the original estimates the excess being due to the very great rise in the cost of material and labour locally owing to war conditions.

Advantages to be derived from the Installation

Under normal conditions the production of maize in Mauritius amounts to from 2,000 to 3,000 tons; in the Grand Port area the production normally is about 1,000 tons; climatic conditions in Mauritius do not favour the rapid drying of maize in the field as occurs in some maize producing countries. Consequently in the absence of special drying facilities the crop has to be disposed of very rapidly to avoid spoiling and even so considerable loss in this way occurs each year. The effect is seen in remarkable fluctuations in the price of maize; when maize is plentiful the price is usually very low while such periods alternate with times when maize is scarce and prices extremely high. The provision of drying arrangements may be expected in normal conditions to stabilise the market sensibly since it will enable any surplus of maize to be preserved for future use.

It was the intention of the Government to follow two lines of policy in relation to maize drying (a) To purchase maize when plentiful at low rates preferably on a profit sharing basis and (b) to dry grain for planters and estates.

The considerable disturbance of economic conditions owing to the greatly augmented prices of imported food and the prospects of shortage have up to the present hindered these projects from being fully realised. A greatly increased demand for locally produced maize has arisen and small planters have experienced no difficulty in the disposal of their crop as a general rule, at prices close on three times as large as those normally experienced when maize is plentiful. In the circumstances, it was decided by His Excellency the Governor, after a review of the facts of the case, that it would at present be inexpedient to embark on the purchase of maize as a general line of policy, the drying of maize for planters alone being undertaken for the present. At the end of the year maize had been received for drying from one estate up to five tons. It is to be added that maize does not become available in quantity in the Grand Port area until April.

Careful estimates were made of the cost of drying maize at the Sécherie, and it was calculated that the purchase, drying and resale of maize could not be undertaken at a less figure than 2 cents per lb. owing partly to the considerable loss of weight experienced as the result of evaporation of moisture. The work of drying maize for planters was expected to cost 1½ cents per lb. Subsequent experience shewed that these calculations were approximately correct.

For the post of Manager of the Sécherie, Mr. A. Delord, lately Officer-in-charge of Phytalus Destruction, was selected. He assumed duty in October. At the time of his appointment it was agreed by His Excellency the Governor that, at such times as the Sécherie was not working, his services could be utilised for other branches of Agricultural work, and, accordingly, during the months of October, November and part of December, his time was occupied in the reaping and laying out of cane experiments on estates.

ANNEXURE XII.

REPORT OF THE
BOARD OF AGRICULTURE

The Board of Agriculture established under article 14 under Ordinance No. 30 of 1913 consists of :—

His Excellency the Governor.—*President.*
The Director of Agriculture.—*Vice-President.*

The following members were appointed under Notification No. 3 of January 10th 1917, for the year 1917 :—

The Honourable Sir Henry Leclézio, K.C.M.G.,
The Honourable M. Martin,
The Honourable J. A. Duclos,
G. Antelme, Esquire,
A. Carcenac, Esquire,
Arthur Dalais, Esquire,
T. L. d'Arifat, Esquire,
L. H. de Froberville, Esquire,
H. G. Ducray, Esquire,
W. P. Ebbels, Esquire,
M. Guimbeau, Esquire,
A. Hugnin, Esquire,
T. W. Innes, Esquire,
F. N. Langlois, Esquire,
G. Mayer, Esquire,
G. Régnard, Esquire,
A. Wiehé, Esquire,
Pundit H. Dwarka.

Meetings of the Board of Agriculture were held on June 20th and on November 14th, 1917.

June Meeting.—At the June meeting presided over by His Excellency the Governor, the following printed reports and Bulletin were laid before the Board :—

1.—The Annual Report on Cooperative Credit Societies for 1916 ;
2.—Bulletin No. 5 Scientific series, on " Moth-Borers affecting sugar cane in Mauritius." ;
3.—The Preliminary estimate of 1917–18 sugar crop ;
4.—Soil survey of Pas Géométriques ;
5.—Tobacco cultivation experiments at Pamplemousses and Riche Terre ;
6.—Improvement of maize by selection ;
7.—Rules for Food plantation Scheme at " La Ferme."

The following matters received consideration :—

1.—Phytalus Destruction ;
2.—Maize Sécherie at Mahebourg ;
3.—Imported Stock ;
4.—Measures to be taken to increase the Live-Stock in the Colony ;
5.—Foot-and-Mouth Disease ;
6.—Collection of information regarding cane cultivation in Mauritius ;
7.—The Local Production of Food Stuffs ;
8.—Tobacco cultivation.

November Meeting.—At the November meeting presided over by His Excellency the Governor the following reports were laid before the Board :—

1.—Annual report of the Department of Agriculture, 1916 ;
2.—Entomologist interim report on his visit to Madagascar ;
3.—Report on the outbreak of Foot-and-Mouth Disease in Mauritius ;
4.—Revised estimate of the 1917–18 sugar crop.

The following leaflets were also laid before the Board :—

(a) Potato Disease
(b) Soil exhaustion
(c) Feeding value of corn cobs.

The following matters received consideration :—

1.—Slaughter of Cattle Restrictions Ordinance ;
2.—Working of the Maize Sécherie ;
3.—Food crops on Crown lands ;
4.—Sugar cane experiments ;
5.—Stock Farm ;
6.—School of Agriculture (lines of study) ;
7.—Tobacco experiments ;
8.—Lime cultivation on a commercial scale.

HENRI ROBERT,
Secretary.

Number of Beetles captured during the year 1917. (Pamplemousses).

Months–1917	Mon Rocher	The Mount and Pte. Rosalie	Maison Blanche	Beau Plan	Espérance	Grande Rosalie	Small Planters	St. André	Souvenir	Beau Séjour	Solitude	R. B. Gardens	Total No. of Beetles	Total spent
														Rs. c.
January	61,370	2,403,210	573,330	6,940,910	5,180,250	705	2,184,800	39,650	5,050	...	...	21,540	17,410,815	4,202 19
February	25,475	675,905	84,355	1,205,540	991,961	349	154,000	17,505	1,780	...	...	7,718	3,164,588	1,657 95
March	11,475	203,468	18,770	347,020	271,810	379	...	11,690	1,277	...	...	1,112	867,001	918 02
April	...	...	...	82,900	...	...	...	...	...	...	...	...	82,900	785 92
May	...	...	...	800	...	...	...	...	...	...	...	...	800	554 94
June	...	...	...	...	...	...	...	...	...	...	...	...	...	445 64
July	...	...	...	...	...	...	...	...	...	...	...	...	...	463 40
August	...	...	...	...	...	...	...	...	...	...	...	...	...	254 20
September	...	...	...	...	904	...	...	...	...	...	...	...	904	232 61
October	12,941	29,582	785	52,711	19,149	240	...	93	1,090	...	...	...	116,591	311 06
November	65,388	3,668,774	423,495	3,496,852	1,668,106	4,085	476,930	160	9,484	...	250	5,683	9,819,207	2,440 23
December	1,025,655	12,480,450	1 096,100	13,171,020	4,258,680	14,985	4,244,400	264	32,270	7,979	603	31,467	36,363,873	8,000 88
Beetles : Total ...	1,202,304	19,461,389	2,196,835	25,297,753	12,390,860	20,743	7,060,130	69,362	50,951	7,979	853	67,520	67,826,679	20,267 04

Number of larvæ dug out

	The Mount	Maison Blanche	Beau Plan	Espérance	Pte. Rosalie	Total
May	1,204,000	114,000	...	123,500	26,200	1,467,700
June	1,174,000	212,700	17,000	189,500	...	1,593,200
July	150,000	...	1,487,000	...	...	1,637,000
August	...	...	566,000	...	...	566,000
September	...	...	404,000	9,000	....	413,000
Larvæ : Total ...	2,528,000	326,700	2,474,000	322,000	26,200	5,676,900